Antec Low Noise Technology

*True*Power

Antec TruePower User's Manual

Antec TruePower ATX12V power supply
Models: TRUE330, TRUE380, TRUE430, TRUE480, TRUE550

Antec Low Noise Technology: The Antec TruePower power supply is equipped with special circuitry to achieve optimum balance between noise reduction and necessary cooling. Thanks to an advanced temperature response system the power supply fans run at the lowest speed appropriate to load and conditions. The result is a great reduction in overall noise, even in comparison to traditional thermally-controlled fans.

Your TruePower power supply can also monitor and control the system case fan speed. There are two dedicated fan connectors marked Fan Only from the power supply for system case fans. You may connect your case fans to them and have the TruePower circuitry control the speed of the case fans.

Note: Please do not connect more than three external fans to the Fan Only connectors in any combination. For maximum cooling you may choose to connect the case fans to the regular 4-pin peripheral connectors, but in this fashion noise will not be reduced.

Connectors: The Antec TruePower power supply is an ATX12V form factor power supply. An ATX12V power supply has a single 20-pin Main Power Connector, a 6-pin AUX Power Connector and a 4-pin +12V Power Connector to the motherboard. It also comes with seven 4-pin Peripheral Power Connectors and two 4-pin Floppy Drive Power Connectors to your drives. It is backwards compatible to previous ATX form factor power supplys. If your motherboard does not support the AUX Power Connector or the +12V Power Connector, you can still use this power supply.

The TruePower power supply is also equipped with a 3-pin fan signal connector. Connect it to one of the fan connectors on your motherboard. You may monitor the speed of the rear power supply fan through your motherboard BIOS or through the monitoring software that comes with your motherboard.

Note: The speed of the fan may be as low as 1500 RPM when temperatures are low. At these speeds some motherboards may not be able to properly detect the fan speed and may generate false warnings of fan failure. Please refer to your motherboard manual for proper fan monitoring set up.

Power Switch: This power supply comes with a main power switch. Make sure you turn the switch to the ON (I) position before you boot up your computer for the first time. In normal operation there is no need to turn the switch to the OFF (O) position since the power supply is equipped with a soft on/off feature which turns your computer on and off through the soft switch on your computer case. You may need to turn the switch to the OFF position occasionally should your computer crash and you cannot shut it down through use of the soft switch.

[Applicable only to models designed for sale in the European Union: TruePower models designed for the EU include Power Factor Correction (PFC) circuitry in accord with European standard regulation code EN61000-3-2. By altering the input current wave shape, PFC improves the power factor of the power supply and results in increased energy efficiency, reduced heat loss, prolonged life for power distribution and consumption equipment, and improved output voltage stability.**]**

Installation:

Note (not applicable to models designed for the European Union): Check the red power supply voltage switch setting before installation. It should be the same as your local power voltage (115V for North America, Japan, etc. and 230V for Europe and many other countries). Change the voltage setting if necessary. Failure to take this precaution could result in damage to your equipment and could void your warranty.

1. Disconnect the power cord from your old power supply.
2. Follow your computer case manual and open the case.
3. Disconnect all the power Connectors from the motherboard and from the peripheral devices such as case fans, hard drives, floppy drives, etc.
4. Remove the existing power supply from your computer case and replace it with the Antec power supply.
5. Connect the Power Connectors to your motherboard and peripheral devices.
6. Connect the case fans to the dedicated fan connectors.
   Note: Do not connect other devices except fans to these connectors. You may connect case fans to the regular 4-pin Peripheral connectors if you choose not to utilize TruePower Circuitry on your case fans.
7. Connect the 3-pin fan signal connector to one of the fan connectors on your motherboard.
   Note: You do not need to connect the 3-pin fan signal connector in order to make the power supply work if you choose not to monitor the speed of the fan.
8. Close the computer case.
9. Connect the power cord to the Antec power supply

Specifications:

1.0 INPUT:

1.1. VOLTAGE

RANGE	MINIMUM	NOMINAL	MAXIMUM	UNITS
1	90	115	135	VRMS
2	180	230	265	VRMS

1.2 FREQUENCY

47Hz ~ 63Hz

1.3 CURRENT

	115V	230V
TRUE330	7A	4A
TRUE380	8A	5A
TRUE430	9A	5A
TRUE480	12A	6A
TRUE550	12A	6A

1.4 INRUSH CURRENT

115V/50A(max.), 230V/80A(max.) at 25°C cold start

1.5 POWER EFFICIENCY

68% (min.) at full load, 115/230Vac 60Hz/50Hz

2.0 OUTPUT:

VOLTAGE	+5V	+12V	+3.3V	-5V	-12V	+5VSB
MAX. LOAD						
TRUE330	30A	17A	28A	0.5A	1.0A	2.0A
TRUE380	35A	18A	28A	0.5A	1.0A	2.0A
TRUE430	36A	20A	28A	0.5A	1.0A	2.0A
TRUE480	38A	22A	30A	1.5A	1.0A	2.0A
TRUE550	40A	24A	32A	0.5A	1.0A	2.0A
MIN. LOAD	0A	0.8A	0A	0A	0A	0A
REGULATION	±3%	±3%	±3%	±5%	±5%	±5%
RIPPLE & NOISE (mV)	50	120	50	50	120	50

Note:

1) The continuous maximum total output power

	TOTAL MAX. OUTPUT	+5V,+12V & +3.3V MAX. OUTPUT
TRUE330	330W	310W
TRUE380	380W	360W
TRUE430	430W	410W
TRUE480	480W	460W
TRUE550	550W	530W

2) Peak surge current: 15 sec max.

Measurements shall be made with an oscilloscope with 20MHz bandwidth. 10uF elec trolytic capacitor parallel 0.1uF ceramic capacitor to simulate system loading to measure it.

3) At peak load +12V output regulation +/-10%.

2.1 HOLD-UP TIME: 20ms (minimum)

Test Condition: Full load. AC input 115V or 230V, 60Hz or 50Hz

2.2 LOAD TRANSIENT RESPONSE (STEP LOAD)

Step load changes up to 20% of full load, while other loads remains constant within the rating. The load waveform shall be a square wave with the slope of the rise and fall at 0.1A/usec and the frequency shall be from 10Hz to 1 kHz. The DC output voltage will stay within regulation during the step load changes.

2.3 OVERSHOOT

Overshoot at turn on or turn off shall be less than 10% of the nominal output voltage.

3.0 PROTECTION:

If the power supply latches into shutdown stage (when over current, over voltage or short circuit protection is working), the power supply shall return to normal operation only after the fault has been removed and PS-ON is reset for a minimum of 1 Second or remove AC power is removed and re-applied.

3.1 OVER CURRENT PROTECTION

Overload currents applied to each tested output rail will cause output trip before they reach or exceed 110% ~ 150% for testing purposes. Overload currents should be ramped at a minimum rate of 10 A/s starting from full load.

3.2 OVER VOLTAGE PROTECTION

SENSE LEVEL	OVER VOLTAGE
+5V	6.5V/max.
+12V	15.6V/max.
+3.3V	4.1V/max.

3.3 SHORT CIRCUIT PROTECTION

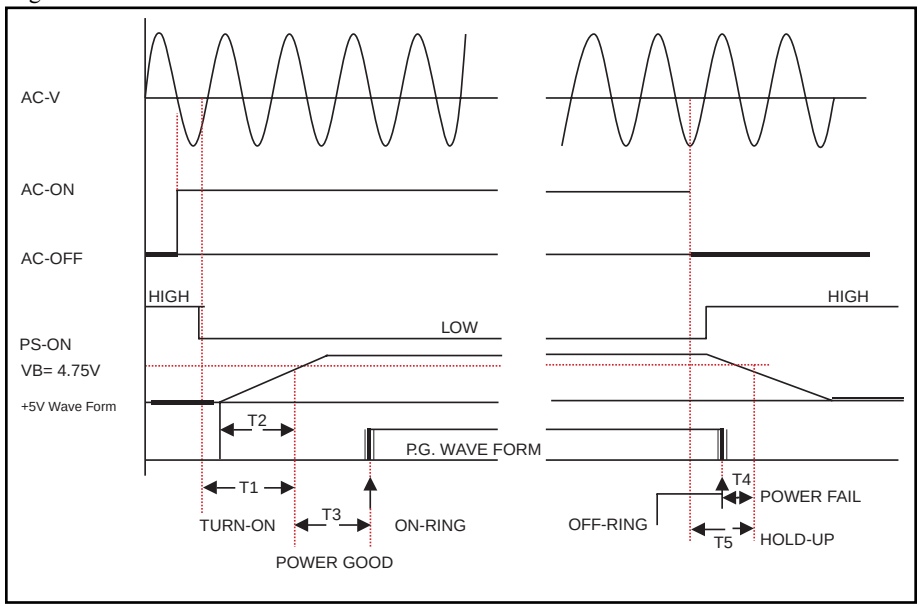
All output to GND.

4.0 TIME SEQUENCE:

T1 Turn On Time (500ms max.)
T2 Output Voltage Sequencing (20ms max.)
T3 Power Good Delay Time (100ms < t3 <500ms)
T4 Power Fail Delay Time (1ms min.)
T5 Power Good Hold-Up time (20ms min)

115V/230V(FULL LOAD): 1ms minimum

Figure 1.



4.1 REMOTE ON/OFF CONTROL

The power supply is turned on or off by TTL signal.

Active low	Power supply turn on
Active high	Power supply turn off

Remote On/Off Signal Characteristics

PS-ON	MIN	MAX
Vil, input low voltage		0.8V
Vil, input low current, Vin=0.4V		-1.6mA
Vih, input High voltage, lin=-200uA	2.0V	
Vih open circuit, lin=0		5.25

4.2 AUXILIARY +5VSB

This power supply is specifically equipped with an independent stand-by +5V output current, 2.0A max. This output will always provide +5V except when the AC line is cut-off.

4.3 AUTO RESTART

If the output of the power supply drops out of the regulation caused by AC line Voltage, the power supply will automatically resumes normal operation only after the AC line voltage returns to the specified operating range.

5.0 ENVIRONMENT:

Ambient operation temperature	10°C to +50°C
Ambient operation relative humidity	20% to 85%
Ambient storage temperature	-40°C to +70°C
Ambient storage relative humidity	10% to 95%

6.0 CE REQUIREMENTS:

6.1 EMI
1. MEET FCC CLASS B
2. MEET EN55022 CLASS B

6.2 ESD
MEET IEC-801-2/8KV

6.3 EFT/BURST
MEET IEC-801-4/2KV

6.4 SAFETY REQUIREMENTS
1. MEET UL 1950
2. MEET IEC 60950

7.0 MTBF

80,000 hours at 25°C (demonstrated)

8.0 DC CONNECTOR AND CASE REQUIREMENTS

ATX MAIN CONNECTOR (P1)

HOUSING: P/N P20-I42002 or equivalent.
TERMINAL: P/N I42002BS-2 or equivalent.

16AWG (Wire)	Signal	Pin	Pin	Signal	16AWG (Wire)
Orange (16AWG)	+3.3VDC	11	1	+3.3VDC	Orange
Brown (22AwG)	+3.3V default sense	11			
Blue (18AWG)	-12VDC	12	2	+3.3VDC	Orange
Black	COM	13	3	COM	Black
Green (18AWG)	PS-ON	14	4	+5VDC	Red
Black	COM	15	5	COM	Black
Black	COM	16	6	+5VDC	Red
Black	COM	17	7	COM	Black
White (18AWG)	-5V	18	8	POK	Gray (18AWG)
Red	+5VDC	19	9	+5VSB	Purple (18AWG)
Red	+5VDC	20	10	+12VDC	Yellow

PERIPHERAL POWER CONNECTOR

(P2, P4, P6, P7, P8, P9, P10)
HOUSING: JMT JP1120-4
HOUSING: WST P4-A10202 OR EQU
TERMINAL: JMT J1120BS-2
TERMINAL: WST A10209BS-2

Pin	Signal	18AWG (Wire)
1	+12VDC	Yellow
2	COM	Black
3	COM	Black
4	+5VDC	Red

FLOPPY DRIVE POWER CONNECTOR

(P3, P5)
HOUSING: JMT JP11635-4
HOUSING: WST P4-I25001 OR EQU
TERMINAL: JMT J11635BS-2
TERMINAL: WST I25001BS-2 OR EQU

Pin	Signal	22AWG (Wire)
1	+5VDC	Red
2	COM	Black
3	COM	Black
4	+12VDC	Yellow

AUXILIARY POWER CONNECTOR (PS1)

HOUSING: WST P/N P20-I42002 or equivalent
TERMINAL: WST P/N I42002BS-2 or equivalent

Pin	Signal	16AWG (Wire)
1	COM	Black
2	COM	Black
3	COM	Black
4	+3.3VDC	Orange
5	+3.3VDC	Orange
6	+5VDC	Red

+12V CONNECTOR

HOUSING: MOLEX 39-01-2040 or equivalent.
TERMINAL: MOLEX 39-29-9042 or equivalent.

Pin	Signal	20AWG (Wire)
1	COM	Black
2	COM	Black
3	+12VDC	Yellow
4	+12VDC	Yellow

FAN SPEED MONITORING CONNECTOR

Pin	Signal	24AWG (Wire)
1	SENSOR	Blue
2	NONE	
3	COM	Black

FAN ONLY CONNECTOR

Pin	Signal	18AWG (Wire)
1	+12VDC	Yellow
2	COM	Black
3	NO PIN	
4	NO PIN	